CLAIMS

1. A method to determine a position of a head on a reference surface of a media including a plurality of pulses extending radially across said reference surface, at least one of the pulses having a gap such that the at least one of the pulses is radially discontinuous, comprising:

measuring the plurality of pulses with the head;

moving the head across said reference surface;

detecting the gap; and

determining said position based on detecting the gap.

2. The method of claim 1, wherein the gap is detected by an absence of the at least one of the pulses.

3. The method of claim 2, wherein the gap includes at least one edge defined by a radial transition from a presence of the at least one of the pulses to the absence of the at least one of the pulses.

4. The method of claim 3, wherein said position is further determined based on detecting the at least one edge.

5. The method of claim 4, wherein the at least one edge is detected when an amplitude of a signal measured by the head exceeds a threshold.

6. The method of claim 4, wherein said reference surface further includes a plurality of chevrons extending radially across said reference surface; and

wherein when the at least one edge is detected, a phase of at least one of the chevrons measured at substantially the same radial location identifies a fractional portion of said position.

7. The method of claim 6, wherein said position can further be determined by counting a number of the at least one of the chevrons detected between the at least one edge and said position.

8. A method to determine a position of a head on a reference surface of a media including at least one servo wedge extending radially across at least a portion of said reference surface, said servo wedge including a plurality of pulses and a plurality of chevrons, at least one of the pulses having a gap such that the at least one of the pulses is radially discontinuous, the method comprising:

detecting the plurality of pulses with the head;

moving the head across said reference surface in a first direction;

detecting the gap;

moving the head across said reference surface in a second direction opposite the first direction;

detecting at least one edge of the gap; and

determining a gross position based on the at least one edge.

9. The method of claim 1, wherein the gap is detected by an absence of the at least one of the pulses.

10. The method of claim 8, wherein the at least one edge is defined by a radial transition from a presence of the at least one of the pulses to the absence of the at least one of the pulses.

11. The method of claim 8, wherein the at least one edge is detected when an amplitude of a signal measured by the head exceeds a threshold.

12. The method of claim 8, further comprising determining a phase of at least one of the chevrons measured at substantially the same radial location as the at least one edge;

determining a fine position based on the phase.

13. The method of claim 12, wherein said position can further be determined by counting a number of the at least one of the chevrons detected between the at least one edge and said position..

14. A method to determine a position of a head on a reference surface of a media including a template pattern printed on said reference surface, said template pattern having at least one servo wedge extending radially across a portion of said reference surface, said servo wedge including a plurality of pulses and a plurality of chevrons, at least one of the pulses

having a gap such that the at least one of the pulses is radially discontinuous, the method comprising:

detecting the plurality of pulses with the head;

moving the head across said reference surface in a first direction;

detecting an absence of the at least one of the pulses;

moving the head across said reference surface in a second direction opposite the first direction;

detecting a radial transition from a presence of the at least one of the pulses to the absence of the at least one of the pulses; and

determining a gross position based on the radial transition;

measuring a phase of at least one of the chevrons measured at substantially the same radial location as the radial transition;

determining a fine position based on the phase.

15. The method of claim 14, wherein the radial transition is detected when an amplitude of a signal measured by the head exceeds a threshold.

16. The method of claim 14, wherein said position can further be determined by counting a number of the at least one of the chevrons detected between the at least one edge and said position.

17. A method to manufacture a reference surface for self-servo writing one or more surfaces of one or more rotatable media in a data storage device, comprising:

selecting a transfer medium having a template pattern, the template pattern including:

a marker-zone to determine a position of a head on the reference surface, the marker-zone including one or more edges defined by a radial transition from a presence of a transition-pair to an absence of the transition-pair;

wherein at least one of the one or more edges is located at a radial position; and

wherein the at least one of the one or more edges precedes one or more chevrons located at the radial position.

selecting a master disk having one or more surfaces;

transferring the template pattern to one of the one or more surfaces of the master disk.

18. The method of claim 17, wherein the transfer medium is a reticle.

19. The method of claim 17, wherein the transfer medium is a die.

20. The method of claim 17, wherein the transfer medium is a disk.

21. A method to manufacture a template pattern, comprising:

forming a marker-zone to determine a position of a head in a data storage device, the marker-zone including one or more edges defined by a radial transition from a presence of a transition-pair to an absence of the transition-pair;

wherein at least one of the one or more edges is located at a radial position; and

wherein the at least one of the one or more edges precedes one or more chevrons located at the radial position.